

## CLAIM(S)

### I claim

[0030] 1. A short circuit detector for a fieldbus network, said network comprising a positive lead, a negative lead and a shield conductor connected to ground, comprising:

- 5           a) a first high impedance semiconductor circuit coupled between said positive lead and said shield conductor and having a first output;
- b) a second high impedance semiconductor circuit coupled between said negative lead and said shield conductor and having a second output; and
- c) an alarm circuit coupled to said first and second outputs for activating an alarm
- 10           whenever a short circuit exists between either of said positive or negative leads and said shield conductor.

[0031] 2. The short circuit detector of claim 1 wherein said alarm circuit includes a ground connection which is isolated from shield conductor.

15 [0032] 3. The short circuit detector of claim 2 wherein the alarm circuit includes an opto-isolator device.

[0033] 4. A short circuit detector for a fieldbus network, said network comprising a positive lead, a negative lead and a shield conductor connected to ground, comprising a first high impedance alarm circuit coupled between said positive lead and said shield conductor and a second high impedance alarm circuit coupled between said negative lead and said shield conductor.

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[0034] 5. The short circuit detector of claim 4 wherein said first and second high impedance alarm circuits each comprise a constant current diode connected in series with an alarm indicator device.

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[0035] 6. The short circuit detector of claim 5 wherein said alarm indicator device is a light emitting diode.

30 [0036] 7. The short circuit detector of claim 1 wherein each of the first and second high impedance semiconductor circuits have a visual indicator device for identifying whether a short circuit has occurred in either the positive or the negative lead.

[0037] 8. The short circuit detector of claim 1 wherein each of the first and second high impedance semiconductor circuits include a zener diode for blocking current except in a short circuit condition.

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[0038] 9. The short circuit detector of claim 8 wherein each of the first and second high impedance semiconductor circuits include a semiconductor device coupled to an opto-isolator device.

5 [0039] 10. The short circuit detector of claim 9 wherein each opto-isolator device is coupled to an alarm circuit.